

Operational and Medical Procedures for a declared Contingency Shuttle Crew Support (CSCS) Shuttle mission due to a failure that precludes a safe return

- ASSUMPTION AND PROCEDURES**
- Assuming 10 crewmembers (7 Shuttle and 3 ISS crewmembers) on ISS
 - Stranded Shuttle crew all return recumbent (see below figure 1)
 - ISS crew remains on ISS post-rescue mission or returns on Soyuz if required to decrease consumables due to ISS life support failures.
 - Compromised Shuttle will remain docked to ISS for ~20 days before unmanned reentry
 - The rescue Shuttle will be launched within ~30 days of Contingency Shuttle Crew Support (CSCS) event
 - Use of compromised Shuttle's assets will be maximized
 - Periodic CSCS Thermal Protection Systems duration assessments performed at the program level will determine actual duration capability
 - limiting consumables are O₂, CO₂ removal, water, waste management, and food
 - O₂ and CO₂ calculations include all 10 crewmembers exercising nominally and with a caloric intake of 2000 calories per day.
 - Available food will be shared by all
 - Duration reports will plan on using up all ISS consumables. Replenish with rescue Shuttle if necessary to support continued ISS operations
 - Shuttle crew can exercise on shuttle equipment and "non-consumable" ISS equipment
 - Preserve ISS exercise hardware for ISS crew (i.e., TVIS, RED, VELO, and CEVIS)
 - Utilize existing compromised Shuttle and ISS assets for health exams
 - Med Ops ground support will consist of Surgeon, BME, and landing site support
 - Total worst-case duration scenario for stranded Shuttle crew on-orbit is 74 days, dependent on oxygen and other limiting factors

